

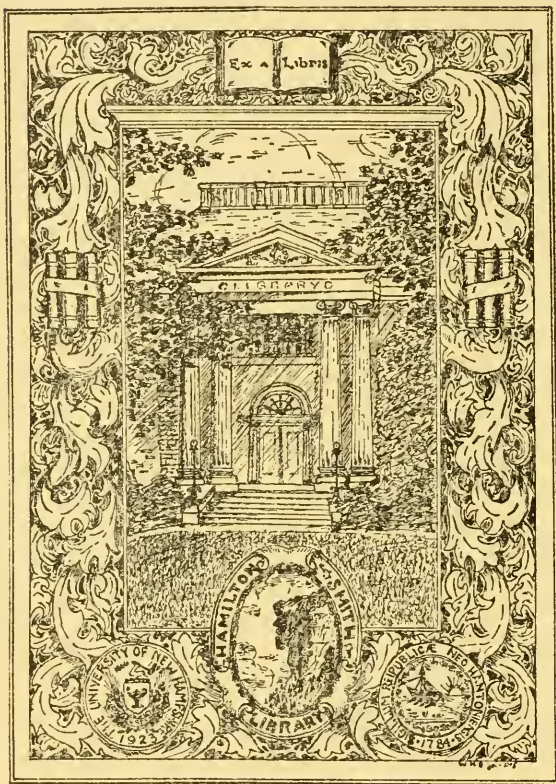


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EXPERIMENT STATION LIBRARY

Bulletin No. 233

March, 1938.

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NEW HAMPSHIRE AGRICULTURAL
EXPERIMENT STATION
DURHAM, N. H.

RESULTS OF SEED TESTS

Made July 1, 1928 to June 30, 1929

The total number of seed samples tested in the Experiment Station laboratory this year was three hundred eighty-six. Of this number three hundred thirty-one were official and are reported in this bulletin. In addition to these, fifty-five private lots were tested. The official samples were collected by an agent employed by the Commissioner of Agriculture and sent to the seed testing laboratory where purity analyses and germination tests were made in order to ascertain if each sample was of as good quality as its accompanying guarantee indicated.

A certain amount of variation is always to be expected in comparing two or more tests of seeds. There may be some lack of uniformity in the product itself under the most exacting methods of sampling; and always the human factor, together with the moisture, temperature, light, etc., of the mechanical equipment involved in making germination and purity tests may contribute some small element of variation in spite of the most rigorous attention to details and the very skillful use of the most sensitive apparatus. In the tests this year, as usual, due allowances have been made for such unavoidable errors. Rather exhaustive trials of each sample of apparent poor quality have been carried out. Every effort is made to give each package of seed the benefit of the doubt until such time as repeated trials and comparisons with other similar seeds of known quality have proved our environmental investigational conditions all right and the sample under consideration unquestionably at fault. The usual allowances for both purity and germination were explained in detail in last year's bulletin and will not be repeated here.

The summary table on the last page will show the general results of the seed inspection work for the year ending June 30, 1929. It may be noted that a large propor-

tion of the samples was found to be as represented. In purity 88 percent was found satisfactory or better, and in germination 84 percent. This year a much larger percent of the red clover samples was found below in both purity and germination than last year. This statement also applies to red top. When all the different kinds of seeds are considered, the percent found low has not increased over last year's figures significantly, perhaps, but it indicates a lack of decided improvement, at least, which might be possible and desirable.

THE PURPOSE OF SEED TESTING

To the dealer who feels that seed testing requirements add just so much more routine to his already overburdened list of details, as well as to the farmer who seldom looks at this bulletin or even at the guarantee tags on the seed he buys, all our efforts may sometimes seem mere wasted energy. And yet, in general, seed testing has been, and is a most potent factor for good to the individuals in both these lines of business. Each is afforded an opportunity to know more about the product he is handling. The dealer who intends to sell only the best is protected against buying inferior seed as well as from the unwarranted suspicion of the farmer who has experienced a crop failure of uncertain origin. Few people, indeed, can detect by observation appreciable quantities of dirt or weeds in various species of seeds and no one can successfully prophesy as to the viability of seeds except by making actual germination tests. The details necessary for getting reasonably uniform results in the sprouting of some of our common plants is little appreciated. Kentucky bluegrass requires about a month to complete a germination test, for example, and all this time certain temperature and moisture conditions must be carefully provided. And, again, not a single uniform temperature but alternating from "hot" to "cold", 68° to 86°, and back

again once a day for the whole period. Uniform moisture must be provided also, not alone by an absorbent substratum like cloth or blotting paper placed in a saturated atmosphere but by means of capillary wicks suspended in an adjacent free water surface. Canada bluegrass requires a glass germinator for controlling temperature and moisture in order that it may be flooded with light, either natural or artificial, for a certain period of each day. Some seeds require, for best results, absorbent cotton for a substratum rather than blotting paper or cloth. Ordinary lettuce represents such a species. Certain kinds respond better when the substratum is wet with a very weak solution of potassium nitrate, but in nearly all cases pure water only is used for moisture. Ordinary blotting paper, even when pure white, is often fatal to well known species like timothy because of alum or other soluble salts commonly employed in its manufacture. To guard against this difficulty, only the most carefully prepared blotting paper, especially manufactured for the purpose, is used. Ours is obtained from a large manufacturer in Washington, D. C.

Purity tests require a corresponding amount of care and attention to detail. Careful sampling in the store, and correct division of the sample in the laboratory are important preliminaries to accuracy in this phase of the work. For each of these purposes, special instruments and machines are provided. It is not enough to be able to tell pure seed from adulterants, difficult enough in many cases, but the analyst must also distinguish between the imperfect glumes of such seeds as oats, redtop, bluegrass and similar species, and the glumes which inclose a perfect seed of potential germinative capacity. These species which ordinarily carry chaffy glumes covering the seed proper, as threshed from the straw and as best protected against molds and other diseases for planting purposes, often provide apparently healthy seeds which reveal nothing but empty glumes on careful examination. This distinction

may be made by gravity sometimes in a specially constructed blower, sometimes by appearance under a hand lens, and often only by pressure on each individual seed with a pair of forceps held in the hand.

Nowadays little really poor seed is likely to be found on the market. The wholesaler strives to handle only such quality of seeds as evidence a good guarantee and live up to that guarantee with sufficient uniformity to meet the requirements of all the seed testing stations in the country. A few cases have come to our attention in recent years, however, particularly with mixtures like lawn grasses, in which an apparent attempt has been made to pass chaff or empty glumes for good seed or to include species of doubtful value for the purpose suggested. It is to the credit of our local retail stores to state that samples of these mixtures are often sent to us for a preliminary examination and consequently fail to find a market for the product in New Hampshire. Another cogent reason for poor seeds and for discrepancies between the tests and the guarantees is the carrying over of seeds by the retailer from year to year. The State Law requires on the label the date when tested, which tends to alleviate this difficulty, as both farmers and merchants realize that seed deteriorates more or less with age. Our best dealers send to the laboratory regularly every spring samples from all seed left over from the previous year. Of course the purity does not change materially unless disease or insect injury occurs, but a new test on germination provides a basis for judging whether to sell the seed for feed, or to put it on the market again with a new label revised to date.

Our law does not prevent the sale of seed which is of very poor quality so long as it is labeled such. In this case the farmer needs to read the guarantee. If a sample is only 50 per cent pure seed and 50 per cent germinable then 75 per cent of what he buys is worthless or worse. Half the pure seed he knows will not germinate and half of

the sample is not the seed he wants at all, and quite possibly, is a potential source of many undesirable weeds. Seed that has deteriorated with age from a good test is of questionable vitality, possibly, even though it may evidence 50 per cent of apparently healthy sprouts under the most ideal conditions of the laboratory. In general, most of the farmer's problems of good quality seeds for the common field crops like grasses, grains, and legumes are taken care of in spite of him. Properly guaranteed by a law which requires the label to be truthful, and checked up by a State inspection which is likely to prohibit its sale if found delinquent in any respect, the standards of quality in agricultural seeds are automatically kept high. Only an occasional oversight, lack of appreciation, or possible gross neglect on the part of the vender can result in the farmer's obtaining poor seed.

Before seed testing was in vogue, quite in contrast were the conditions. And it is well to suggest some of the olden practices as indices of what might happen in our present complicated state of society if none of our regulatory measures were in effect. A common method of adulterating small farm seeds was to use those of weeds which had first been heated sufficiently to kill their powers of germination. The killing of the weed seeds was done in the interests of the seller rather than for the farmer. The adulteration with half weed seeds would be less conspicuous if none of them grew. In Europe, at least, sand was graded and colored to resemble clover seeds and used for filler. It had the advantage of being very heavy when sold by weight, in addition to being lifeless. Such were some of the gross malpractices perpetrated on the farmer by unscrupulous commercial concerns in the days much less than a century past before seed testing came in as a proper preventative. In the experience of our own State only a few years since, under a law which was much less satisfactory than the one we now have and before our methods and equipment for

seed testing were as well perfected as they are today, some careless if not malicious practices were common. It was not unusual to find Kentucky bluegrass seed copiously adulterated with the much cheaper Canada bluegrass. Although the seeds are very similar, the cheaper species is much inferior for most purposes for which Kentucky is recommended. The two seeds are never mixed by nature if for no other reason than that they mature at different times of year. Again, white clover, red clover, and alfalfa seeds were occasionally found germinating less than 10 per cent; in one case only 1 or 2 per cent. These low germinations were usually traceable to poor storage conditions or extremely old seed as a result of inefficient and careless retailing. That one company was selling seed that had been in its store for some five or six years was proved by the wholesaler's records. This particular dealer had not replenished his supply in that length of time.

The seed inspection work then is rather far reaching in its effects, and if it fails to develop anything spectacular or pretentious may nevertheless be serving its purpose. In fact, in so far as our commercial seed for farm purposes complies with the law and thus keeps its venders out of difficulty, everybody should be reaping due satisfaction both from the seed business and from the regulations relating thereto. It is far from the intention of the State to harass or unnecessarily inconvenience any person engaged in the seed business, but only to see that competition among dealers is fair and that the farmer buys the goods for which he bargains. Good seed and honest intentions combined with careful merchandising practices should make this condition possible at all times for all persons concerned, and should make them welcome the intervention of the law at any time when other intentions with other merchandise tend to prevail. It is only the careless or occasionally dishonest person that makes regularity measures necessary.

The seed testing laboratory also makes tests free of charge for farmers who wish to sell their own seeds in conformity with the law, or have seeds on hand for planting concerning the quality of which they may be uncertain.

SEED EXAMINATION, 1929

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7276	Alfalfa (2359, Grimm)	S	99.78	S	94
	Chase Grain Mill, Plymouth				
7151	Alfalfa (27673, Idaho Grimm)	S	99.50	S	92
	J. Cushing Co., Exeter				
7060	Alfalfa (Pan American)	S	99.50	S	90
	J. H. Griffin, Newmarket				
7103	Alfalfa (Grimm, Certified Blackfoot)	S	99	77	90
	C. M. Hildreth & Son, Lebanon				
7210	Alfalfa (Ontario Variegated)	S	99.50	70	90
	F. W. Neal & Co., Dover				
7211	Alfalfa (Genuine Grimm)	S	99.50	S	90
	F. W. Neal & Co., Dover				
7372	Alfalfa (27702, Pedigreed)	S	99.50	88	—
	D. A. Noyes & Son, Colebrook				
7067	Alfalfa (Grimm, 2647)	S	99.70	A	77
	John B. Varick Co., Manchester				
7079	Alfalfa (Grimm)	A	99	S	88
	John B. Varick Co., Manchester				
7295	Alsike (2115, Pine Tree)	S	97	S	93
	Ayers & Jenkins, Rochester				
7262	Alsike (Eureka)	S	98	S	90
	Belknap Co. Farmers' Exchange, Laconia				
7332	Alsike (8117)	95.34	98.65	S	87
	Chase Grain Mill, Plymouth				
7184	Alsike (Ace, 021614)	S	95	S	90
	J. Cushing Co., Portsmouth				
7218	Alsike (Extra Fancy White Mtn.) ..	S	97	S	90
	G. H. Eames & Son, Keene				
7331	Alsike (8107, Fullwerth)	S	97.75	S	90
	Farmers' Grain Store, Ashland				
7114	Alsike (Pan American)	S	97	S	88
	S. J. Ford, Danbury				
7299	Alsike	S	97	S	90
	E. C. Foss Co., Rochester				
7113	Alsike (Pan American)	S	97	S	90
	C. M. Hildreth & Son, Lebanon				
7143	Alsike	A	94.05	S	90
	Hilliard & Kimball, Exeter				
7312	Alsike (Ace)	S	95	26	90
	Keegan & French, Franklin				
7165	Alsike (Pan American)	S	97	S	90
	J. A. Lane & Co., Hampton				
7219	Alsike (9973, Pine Tree)	S	97.30	80.5	98
	McQuesten & Lewis, Manchester				
7309	Alsike (21449, Pine Tree)	S	98	S	94
	Meredith Grain Co., Meredith				
7130	Alsike (Pan American)	S	97	S	90
	R. P. Merrill, Hampton Falls				
7241	Alsike (21338, Ace)	S	95	S	92
	Merrimack Farmers' Exchange, Con- cord				
7069	Alsike (Pan American)	S	97.50	S	90
	J. J. Moreau & Son, Manchester				
7261	Alsike (Pan American)	S	97	S	90
	Muzzey & Hopkins, Lakeport				
7231	Alsike (Pan American)	S	97	S	90
	Nashua Grain Co., Nashua				

A=Above

S=Satisfactory

RESULTS OF SEED TESTS, 1929

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SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7208	Alsike (3433)	S	97	81	97
	F. W. Neal & Co., Dover				
7373	Alsike (21417, Pine Tree)	S	97.55	S	93
	D. A. Noyes & Son, Colebrook				
7260	Alsike (6711, Liberty)	S	97	S	85
	Rand & Dearborn, Laconia				
7176	Alsike (Ace, 21184)	S	97.75	84.5	95
	J. H. Seavey, Dover				
7367	Alsike (21729-30)	97.44	99.10	S	94
	Frank Smith Co., Lancaster				
7366	Alsike (21427)	S	97.65	S	93
	F. B. Spaulding Co., Lancaster				
7259	Alsike (3651, Liberty)	S	97	S	85
	C. P. Stevens Co., Franklin				
7285	Alsike	S	98	S	90
	Strafford Co. Grain Mill, Rochester				
7056	Alsike	95.74	98	83.5	95
	A. J. Turcotte, Newmarket				
7081	Alsike (Ace, 2118)	S	95	S	92
	John B. Varick Co., Manchester				
7282	Alsike (10003)	A	92.01	S	96
	E. T. Willson, Farmington				
7141	Alsike (Pan American)	S	97	S	90
	W. A. Young, Exeter				
7273	Barley (Hygrade, 6-row)	S	99	S	97
	Chase Grain Mill, Plymouth				
7339	Barley (71179, 6-row)	S	98.50	A	86
	The Depot Store, Inc., Littleton				
7350	Barley (White Mtn., 2-row)	S	98	S	90
	Holbrook Grocery Co., Woodsville				
7181	Barley (Chevalier, 71127)	S	97.20	S	94
	Jenness Hardware Co., Dover				
7152	Barley (71321, 6-row)	S	98.50	S	96
	Merrimack Farmers' Exchange, Exeter				
7204	Barley (2-row, State)	S	98	S	90
	F. W. Neal & Co., Dover				
7356	Barley (071641, 2-row)	S	97	S	94
	D. A. Noyes & Son, Colebrook				
7341	Barley (071646, 6-row)	S	97	S	93
	Pike & Gale, Littleton				
7207	Barley (6-row)	S	98	S	90
	S. A. Schurman & Son, Portsmouth				
7203	Barley (6-row, 071575)	S	99.30	S	95
	J. H. Seavey, Dover				
7258	Barley (3618, 6-row)	S	99	S	97
	C. P. Stevens Co., Franklin				
7249	Barley (71330, 6-row)	S	99.40	S	95
	Thompson & Hoague Co., Concord				
7074	Barley (6-row, 71162)	S	98.16	A	74
	John B. Varick Co., Manchester				
7092	Barley (71309, 6-row)	S	98.50	S	95
	John B. Varick Co., Manchester				
7353	Bluegrass, Canada. (033547)	S	88	S	85
	Holbrook Grocery Co., Woodsville				
7147	Bluegrass, Kentucky	S	78	S	72
	Hilliard & Kimball, Exeter				
7201	Bluegrass, Kentucky	76.22	84.40	S	73
	J. H. Seavey, Dover				

A=Above

S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7167	Buckwheat, Japanese S. A. Dow & Son, North Hampton	S	98	S	90
7328	Buckwheat, Japanese (6713) C. P. Stevens Co., Franklin	S	98	S	97
7080	Buckwheat, Japanese (7676) John B. Varick Co., Manchester	S	99.75	S	90
7214	Canada Field Peas F. W. Neal & Co., Dover	S	98	S	90
7175	Canada Field Peas (85169) J. H. Seavey, Dover	S	99.50	S	92
7111	Corn (Kato) Lewis Bros., Lebanon	—	—	52.5	90
7161	Millet, Golden (Fancy) S. A. Dow & Son, North Hampton	S	99	S	90
7205	Millet, Golden S. A. Schurman & Son, Portsmouth	S	99	75	90
7294	Millet, Hungarian (4760) Ayers & Jenkins, Rochester	S	98.90	79	90
7301	Millet, Hungarian (47—54) Ayers & Jenkins, Rochester	S	99	S	90
7223	Millet, Hungarian (Fancy) Bell Hardware Co., Derry	S	99	S	90
7283	Millet, Hungarian P. W. Bragg, Farmington	S	98	S	88
7277	Millet, Hungarian O. A. Brown, Ashland	S	99	S	84
7374	Millet, Hungarian F. P. Brown, Whitefield	S	98	S	82
7275	Millet, Hungarian (3001) Chase Grain Mill, Plymouth	A	98	S	85
7166	Millet, Hungarian The E. A. Cole Co., Hampton	S	98	66	80
7154	Millet, Hungarian (4777) J. Cushing Co. Exeter	A	97.40	S	80
7226	Millet, Hungarian J. Cushing Co., Nashua	S	98.36	S	80
7158	Millet, Hungarian (Fancy) S. A. Dow & Son, North Hampton	A	98	73.5	88
7338	Millet, Hungarian (4791) The Depot Store, Inc., Littleton	S	99	S	86
7337	Millet, Hungarian (8801) Farmers' Grain Store, Ashland	S	99	S	90
7304	Millet, Hungarian (Fancy) E. C. Foss Co., Rochester	97.20	99	S	90
7050	Millet, Hungarian (Fancy) J. H. Griffin, Newmarket	94.99	99	25	90
7101	Millet, Hungarian C. M. Hildreth & Son, Lebanon	S	99	66	88
7173	Millet, Hungarian (4792) Jenness Hardware Co., Dover	98.59	99.86	S	85
7300	Millet, Hungarian (Fancy) J. Jones & Son, Alton	S	99	65	85
7279	Millet, Hungarian J. Jones & Son, Alton	S	98	S	88
7109	Millet, Hungarian (xx) Lewis Bros., Lebanon	A	98	69	90
7324	Millet, Hungarian (4791) Meredith Grain Co., Meredith	98.55	99.40	S	90

A=Above

S=Satisfactory

RESULTS OF SEED TESTS, 1929

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SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7272	Millet, Hungarian (4761)	98.32	99.30	78	88
	C. N. Merrill & Sons, Bristol				
7066	Millet, Hungarian (Fancy)	S	99	60	90
	J. J. Moreau & Son, Manchester				
7228	Millet, Hungarian	S	99	S	90
	Nashua Grain Co., Nashua				
7185	Millet, Hungarian	S	99	S	90
	S. A. Schurman & Son, Portsmouth				
7191	Millet, Hungarian (4770)	S	98.70	58	80
	J. H. Seavey, Dover				
7376	Millet, Hungarian (4760)	S	98.90	S	90
	Frank Smith Co., Lancaster				
7375	Millet, Hungarian (4792)	S	98.85	S	85
	F. B. Spaulding Co., Lancaster				
7329	Millet, Hungarian (259)	S	98.80	S	88
	C. P. Stevens Co., Franklin				
7248	Millet, Hungarian (4788)	S	98.04	S	90
	Thompson & Hoague Co., Concord				
7055	Millet, Hungarian	S	98	1.5	93
	A. J. Turcotte, Newmarket				
7090	Millet, Hungarian (6663)	S	99.54	S	82
	John B. Varick Co., Manchester				
7319	Millet, Hungarian (4772)	A	97	S	83
	F. H. Veroneau & Co., Penacook				
7290	Millet, Hungarian	S	98.36	S	80
	E. T. Willson, Farmington				
7142	Millet, Hungarian (Fancy)	S	99	59	90
	W. A. Young, Exeter				
7150	Millet, Hungarian (259)	S	98.80	S	88
	W. A. Young, Exeter				
7240	Millet, Japanese (1028)	S	97.30	S	90
	Abbott Grocery Co., Keene				
7296	Millet, Japanese (55—C 29. Page's) ..	S	97.81	S	87
	Ayers & Jenkins, Rochester				
7256	Millet, Japanese	S	97.52	S	85
	Belknap Co. Farmers' Exchange, Laconia				
7227	Millet, Japanese (Fancy)	94.57	97	S	90
	Bell Hardware Co., Derry				
7217	Millet, Japanese	A	96	S	89
	P. W. Bragg, Farmington				
7365	Millet, Japanese	A	96	S	89
	F. P. Brown, Whitefield				
7278	Millet, Japanese (743)	S	96.38	S	80
	W. B. Brown, Ashland				
7303	Millet, Japanese (35—28)	S	96.70	S	88
	Freeman Carson, Rochester				
7198	Millet, Japanese	S	93	70	86
	R. L. Costello, Portsmouth				
7364	Millet, Japanese (Fancy)	92.93	97	S	88
	G. B. Currier Co., Colebrook				
7135	Millet, Japanese	S	95	S	86
	J. Cushing Co., Exeter				
7215	Millet, Japanese	A	95	S	90
	J. Cushing Co., Nashua				
7340	Millet, Japanese (Fancy)	93.70	96	S	88
	The Depot Store, Inc., Littleton				

A=Above

S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7235	Millet, Japanese Derry Farmers' Exchange, Derry	S	97.40	74	95
7336	Millet, Japanese (8800, Fullwerth) Farmers' Grain Store, Ashland	94.13	96.56	S	94
7099	Millet, Japanese (Fancy) S. J. Ford, Danbury	S	97	S	98
7321	Millet, Japanese (2472) C. J. Goss, Lakeport	S	95.87	S	85.5
7053	Millet, Japanese (Fancy) J. H. Griffin, Newmarket	A	97	S	90
7119	Millet, Japanese (Fancy) C. M. Hildreth & Son, Lebanon	95.40	97	S	88
7351	Millet, Japanese Holbrook Grocery Co., Woodsville	S	97.31	S	90
7192	Millet, Japanese (4474) Jenness Hardware Co., Dover	S	99.51	S	85
7314	Millet, Japanese (Fancy) Keegan & French, Franklin	A	96	S	85
7318	Millet, Japanese Keegan & French, Franklin	95.02	98	S	88
7159	Millet, Japanese (Fancy) J. A. Lane & Co., Hampton	95.55	97	S	90
7233	Millet, Japanese LeBlanc & Kaskadiner, Nashua	S	96	S	85
7323	Millet, Japanese (4486) Meredith Grain Co., Meredith	S	98.54	S	85
7265	Millet, Japanese C. N. Merrill & Sons, Bristol	93.87	96	A	80
7136	Millet, Japanese (Fancy) R. P. Merrill, Hampton Falls	S	96	70	90
7065	Millet, Japanese J. J. Moreau & Son, Manchester	94.40	97	S	90
7232	Millet, Japanese (Fancy) Nashua Grain Co., Nashua	S	95	67.5	80
7209	Millet, Japanese (Fancy) F. W. Neal & Co., Dover	S	97	S	90
7195	Millet, Japanese S. A. Schurman & Son, Portsmouth	93.86	97	S	88
7202	Millet, Japanese (44—113) J. H. Seavey, Dover	A	96.50	S	90
7361	Millet, Japanese (4457) Frank Smith Co., Lancaster	95.42	96.84	S	80
7362	Millet, Japanese (4483) F. B. Spaulding Co., Lancaster	S	95.35	S	94
7250	Millet, Japanese (4482) Thompson & Hoague Co., Concord	S	96.55	S	90
7064	Millet, Japanese A. J. Turcotte, Newmarket	95.55	98	S	90
7078	Millet, Japanese John B. Varick Co., Manchester	S	97	S	87
7084	Millet, Japanese (4477) John B. Varick Co., Manchester	S	97.65	S	90
7363	Millet, Japanese (Fancy) H. K. Webster Co., Colebrook	95.39	97	S	90
7288	Millet, Japanese E. T. Willson, Farmington	S	97.50	S	85
7140	Millet, Japanese (Fancy) W. A. Young, Exeter	S	98	S	88

A=Above

S=Satisfactory

RESULTS OF SEED TESTS, 1929

13

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7149	Millet, Japanese (1028)	94.83	97.31	S	90
7297	W. A. Young, Exeter Oats (Page's Marvel)	S	99	S	89
7330	Ayers & Jenkins, Rochester Oats (Barco Brand)	S	99.50	S	96
7255	A. H. Barney, Franklin Oats (Swedish Type)	S	97.77	S	94
7257	Belknap Co. Farmers' Exchange, Laconia Oats (Granite State)	S	98.50	S	91
7225	Belknap Co. Farmers' Exchange, Laconia Oats (Selected)	S	98	S	90
7266	Bell Hardware Co., Derry Oats (73113, White Mtn. Extra Fan- cy, Am.)	S	97	S	94
7326	W. B. Brown, Ashland Oats (Barco Brand)	S	99.50	S	96.30
7054	W. E. Dunbar & Sons, Manchester Oats (Swedish)	S	98	S	96
7352	J. H. Griffin, Newmarket Oats (73131, Heavy Domestic)	S	99.50	S	94
7170	Holbrook Grocery Co., Woodsville Oats (Swedish Type, 73114)	S	97.50	S	94
7156	Jenness Hardware Co., Dover Oats (Hygrade Fancy)	S	99	S	97
7132	J. A. Lane & Co., Hampton Oats	S	98	S	90
7239	R. P. Merrill, Hampton Falls Oats (73350, Swedish Type)	S	99.08	S	98
7137	Merrimack Farmers' Exchange, Con- cord Oats (Natural)	S	95	S	95
7213	Merrimack Farmers' Exchange, Ex- eter Oats (Welcome)	S	99	S	98
7197	F. W. Neal & Co., Dover Oats (Pennant)	S	99.50	S	96
7190	S. A. Schurman & Son, Portsmouth Oats (073536)	S	98.36	S	96
7317	J. H. Seavey, Dover Oats (Swedish, 61734)	S	95	S	95
7057	C. P. Stevens Co., Franklin Oats	S	98	S	97
7091	A. J. Turcotte, Newmarket Oats (Swedish Type)	S	99	S	90
7355	John B. Varick Co., Manchester Oats (Blue Seal)	S	97	S	90
7287	H. K. Webster Co., Colebrook Oats (Welcome)	S	99	88	99
7093	E. T. Willson, Farmington Orchard Grass (Ace)	A	83	68.5	80
7097	John B. Varick Co., Manchester Rape (Dwarf Essex)	S	98	S	90
7068	C. M. Hildreth & Son, Lebanon Rape (Dwarf Essex)	S	98	S	90
7200	J. J. Moreau & Son, Manchester Rape (Dwarf Essex)	S	99.76	S	89
	J. H. Seavey, Dover				

A=Above

S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7379	Red Clover (Imported)	A	98.25	A	85
	Abbott Grocery Co., Keene				
7291	Red Clover (24290—91, Medium)	S	99	S	94
	Ayers & Jenkins, Rochester				
7253	Red Clover (Domestic)	S	99	S	90
	Belknap Co. Farmers' Exchange, Laconia				
7224	Red Clover (Pan American, French)	S	98.50	63.5	90
	Bell Hardware Co., Derry				
7274	Red Clover	A	98	S	92
	O. A. Brown, Ashland				
7271	Red Clover (White Mtn. Medium) ..	A	99	S	92
	W. B. Brown, Ashland				
7268	Red Clover (6621, Fancy French) ..	98.33	99.22	S	86.50
	Chase Grain Mill, Plymouth				
7155	Red Clover (24391, Ace, Medium Do- mestic)	A	98	S	92
	J. Cushing Co., Exeter				
7193	Red Clover (Ace, Medium Domestic, 241211)	S	98.38	S	90
	J. Cushing Co., Portsmouth				
7327	Red Clover (Imported)	S	99.75	S	94
	W. E. Dunbar & Sons, Manchester				
7333	Red Clover (8322x Medium)	96.09	99.50	S	90
	Farmers' Grain Store, Ashland				
7100	Red Clover (Pan American, French) ..	S	98	S	90
	S. J. Ford, Danbury				
7293	Red Clover (Pan American)	S	98.50	76	90
	E. C. Foss Co., Rochester				
7061	Red Clover	96.95	98.50	63.5	90
	J. H. Griffin, Newmarket				
7102	Red Clover (Pan American, Domestic)	S	98.50	S	90
	C. M. Hildreth & Son, Lebanon				
7122	Red Clover (Eureka)	S	99.25	S	90
	C. M. Hildreth & Son, Lebanon				
7123	Red Clover (Pan American, Domestic)	97.69	99	S	90
	C. M. Hildreth & Son, Lebanon				
7144	Red Clover	S	98.76	S	95
	Hilliard & Kimball, Exeter				
7347	Red Clover (Domestic)	S	97.32	S	91
	Holbrook Grocery Co., Woodsville				
7348	Red Clover (Imported)	A	98.25	S	85
	Holbrook Grocery Co., Woodsville				
7349	Red Clover (241380, Sp. Medium Do- mestic)	S	98	S	93
	Holbrook Grocery Co., Woodsville				
7174	Red Clover, Idaho Grown, 241043—44 Jenness Hardware Co., Dover	S	99	A	86
7307	Red Clover (Domestic)	A	98.50	S	90
	Keegan & French, Franklin				
7163	Red Clover (Pan American, Domestic)	97.77	99	S	90
	J. A. Lane & Co., Hampton				
7108	Red Clover (Ace, Domestic Medium, 24197)	97.75	98.90	S	93
	Manchester Hardware Co., Manches- ter				
7269	Red Clover	S	98.50	S	90
	C. N. Merrill & Son, Bristol				

A=Above

S=Satisfactory

RESULTS OF SEED TESTS, 1929

15

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7146	Red Clover (Pan American) R. P. Merrill, Hampton Falls	96.85	98.50	38	90
7243	Red Clover (23466, Ace Mammoth) . . Merrimack Farmers' Exchange, Con- cord	S	98.52	A	80
7245	Red Clover (241042, Ace) Merrimack Farmers' Exchange, Con- cord	S	98.75	S	92
7070	Red Clover (Pan American) J. J. Moreau & Son, Manchester	S	98	S	90
7267	Red Clover Muzzey & Hopkins, Lakeport	S	95.50	74	94
7230	Red Clover (Pan American) Nashua Grain Co., Nashua	A	98	S	90
7199	Red Clover (Pan American, Domes- tic) F. W. Neal & Co., Dover	S	98.50	S	90
7212	Red Clover (Eureka, Imported) F. W. Neal & Co., Dover	S	99.25	S	90
7221	Red Clover (Imperator) W. F. Neal, Derry	96.28	98	S	90
7342	Red Clover (Domestic) Pike & Gale, Littleton	S	97.32	S	91
7196	Red Clover (Imported) S. A. Schurman & Son, Portsmouth	S	99	S	90
7179	Red Clover (Medium, 24575—1) J. H. Seavey, Dover	A	94	S	95
7377	Red Clover (241542, Medium) Frank Smith Co., Lancaster	76.52	99.02	S	94
7378	Red Clover (241329—30 Medium) . . . F. B. Spaulding Co., Lancaster	S	99.26	S	95
7251	Red Clover (6730) C. P. Stevens Co., Franklin	S	99	S	88
7286	Red Clover (Imported) Strafford Co. Grain Mill, Rochester	A	98.62	S	90
7237	Red Clover (201507, Ace, Medium Domestic) Thompson & Hoague Co., Concord	S	98.02	S	94
7059	Red Clover (Choice) A. J. Turcotte, Newmarket	S	98	34	71
7083	Red Clover (Medium Domestic, 24993, Pine Tree) John B. Varick Co., Manchester	S	99	S	92
7085	Red Clover (Pine Tree, Imported, 24—444) John B. Varick Co., Manchester	S	99.75	S	94
7086	Red Clover (Mammoth Native Pine Tree, 235) John B. Varick Co., Manchester	S	99.25	78	92
7116	Red Clover (Mammoth Ace) John B. Varick Co., Manchester	S	98	S	92
7360	Red Clover (241043—44 Pine Tree, Idaho Grown) H. K. Webster Co., Colebrook	S	99	A	85
7106	Red Clover H. L. Webster & Son, Canaan	97.08	98	A	78
7128	Red Clover (Pan American) W. A. Young, Exeter	S	98.50	76	90

A=Above

S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7305	Red Top (30174, Ace)	S	90.70	75	90
	Ayers & Jenkins, Rochester				
7306	Red Top (30419)	S	91	S	90
	Ayers & Jenkins, Rochester				
7264	Red Top (White Mtn.)	S	95	S	90
	W. B. Brown, Ashland				
7358	Red Top (3043, Ace)	S	90.40	76.5	90
	F. P. Brown, Whitefield				
7302	Red Top (2362)	S	93.80	75	90
	Freeman Carson, Rochester				
7206	Red Top (Choice)	A	92	S	92
	R. L. Costello, Portsmouth				
7134	Red Top (Ace, Fancy, 30846)	A	90	S	90
	J. Cushing Co., Exeter				
7187	Red Top (Fancy, 30169)	S	90.70	S	90
	J. Cushing Co., Portsmouth				
7063	Red Top (Pan American)	S	92	71.5	90
	J. H. Griffin, Newmarket				
7125	Red Top (Pan American)	S	92	S	90
	C. M. Hildreth & Son, Lebanon				
7139	Red Top (Pan American)	87.75	92	76	90
	Hilliard & Kimball, Exeter				
7346	Red Top (Fancy)	S	87	S	88
	Holbrook Grocery Co., Woodsville				
7171	Red Top (30122)	A	92.10	S	90
	Jenness Hardware Co., Dover				
7311	Red Top (Pan American)	S	92	78	90
	Keegan & French, Franklin				
7162	Red Top (Pan American)	88.80	92	65	90
	J. A. Lane & Son, Hampton				
7120	Red Top (Fancy, XX)	A	85	S	85
	Lewis Bros., Lebanon				
7216	Red Top (30410, Fancy)	S	93	74.5	90
	McQuesten & Lewis, Manchester				
7310	Red Top (030619)	S	90	78	93
	Meredith Grain Co., Meredith				
7127	Red Top (Ace, 30767)	S	91.20	S	90
	Merrimack Farmers' Exchange, Exeter				
7246	Red Top (Ace, 30714)	S	91	S	90
	Merrimack Farmers' Exchange, Concord				
7247	Red Top (Fancy, 3072)	S	90.20	S	90
	Merrimack Farmers' Exchange, Concord				
7071	Red Top (Pan American)	S	92	S	90
	J. J. Moreau & Son, Manchester				
7263	Red Top	91.66	95	S	90
	Muzzey & Hopkins, Lakeport				
7229	Red Top	S	92	72	90
	Nashua Grain Co., Nashua				
7359	Red Top (30171, Ace, Fancy)	S	92.10	76	90
	D. A. Noyes & Son, Colebrook				
7178	Red Top (Pine Tree, 308014)	87.02	90	S	90
	J. H. Seavey, Dover				
7308	Red Top (Fancy)	A	91.64	69	90
	C. P. Stevens Co., Franklin				
7284	Red Top (Fancy, No. 1)	S	90	78	90
	Strafford Co. Grain Mill, Rochester				

A=Above

S=Satisfactory

RESULTS OF SEED TESTS, 1929

17

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7236	Red Top (3072, Ace)	S	90.20	S	90
	Thompson & Hoague Co., Concord				
7088	Red Top (Fancy Pine Tree, 30113) ..	S	93	74	90
	John B. Varick Co., Manchester				
7096	Red Top (Ace, 301101)	S	90	S	90
	John B. Varick Co., Manchester				
7126	Red Top (Globe, 3027)	S	98	S	92
	John B. Varick Co., Manchester				
7098	Red Top	88.31	93	S	94
	H. L. Webster & Son, Canaan				
7281	Red Top (Gem)	S	90	S	90
	E. T. Willson, Farmington				
7133	Red Top (Eureka)	A	96	S	90
	W. A. Young, Exeter				
7172	Rye (216264, Rosen)	S	99	72.5	92
	Jenness Hardware Co., Dover				
7117	Rye (6511, Rosen)	S	98	S	88
	Manchester Hardware Co., Man- chester				
7182	Rye, Spring (7497)	S	98	73.5	90
	Jenness Hardware Co., Dover				
7189	Rye (74107, Rosen)	S	98	63	90
	J. H. Seavey, Dover				
7089	Rye, Spring (7487)	S	98	71	90
	John B. Varick Co., Manchester				
7105	Soy Beans	S	98	58	90
	John B. Varick Co., Manchester				
7107	Sweet Clover (White Blossom, 25313) ..	A	99	S	85
	John B. Varick Co., Manchester				
7380	Timothy (6746, Liberty)	S	99.60	S	92
	Abbott Grocery Co., Keene				
7298	Timothy (68072, Pine Tree)	S	99.65	S	95
	Ayers & Jenkins, Rochester				
7254	Timothy	S	99.75	S	94
	Belknap Co. Farmers' Exchange, Laconia				
7289	Timothy	S	98	S	90
	P. W. Bragg, Farmington				
7371	Timothy (68613, Pine Tree)	S	99.60	S	94
	F. P. Brown, Whitefield				
7335	Timothy (8506)	98.67	99.58	S	94
	Chase Grain Mill, Plymouth				
7160	Timothy	S	99.05	S	96
	The E. G. Cole Co., Hampton				
7188	Timothy (Choice)	A	94	S	99
	R. L. Costello, Portsmouth				
7369	Timothy (68750, Pine Tree)	S	99.65	S	94
	G. B. Currier Co., Colebrook				
7129	Timothy (68135, Pine Tree)	S	99.65	S	94
	J. Cushing Co., Exeter				
7183	Timothy (Pine Tree, 69034)	S	99.55	S	94
	J. Cushing Co., Portsmouth				
7164	Timothy (Pan American)	S	96.60	S	92
	S. A. Dow & Son, North Hampton				
7343	Timothy (Gold Medal)	S	99.75	S	90
	The Depot Store, Inc., Littleton				
7344	Timothy (White Mtn. Extra Fancy) ..	S	99.65	S	95
	The Depot Store, Inc., Littleton				

A=Above

S=Satisfactory

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaranteed	F'nd	Guaranteed
7234	Timothy (Pine Tree, 69004)	S	99.65	S	94
	Derry Farmers' Exchange, Derry				
7315	Timothy (68800, Pine Tree)	S	99.65	S	94
	W. E. Dunbar & Sons, Manchester				
7334	Timothy (85211, Matrix)	S	99.62	S	90
	Farmers' Grain Store, Ashland				
7115	Timothy (Herald)	A	97	S	90
	S. J. Ford, Danbury				
7322	Timothy (624B, Liberty)	S	99.60	S	92
	C. J. Goss, Lakeport				
7062	Timothy (Pan American)	S	99.60	S	92
	J. H. Griffin, Newmarket				
7104	Timothy (Pan American)	S	99.60	S	90
	C. M. Hildreth & Son, Lebanon				
7110	Timothy (Pan American)	S	99.60	S	92
	C. M. Hildreth & Son, Lebanon				
7124	Timothy (White Mtn.)	S	99.65	S	95
	C. M. Hildreth & Son, Lebanon				
7145	Timothy (Pine Tree)	S	99.65	S	96
	Hilliard & Kimball, Exeter				
7345	Timothy	S	98	S	92
	Holbrook Grocery Co., Woodsville				
7180	Timothy (Pine Tree, 68090)	S	99.65	S	95
	Jenness Hardware Co., Dover				
7280	Timothy	S	99.60	S	90
	J. Jones & Son, Alton				
7368	Timothy (68917, Pine Tree)	S	99.60	S	94
	C. C. King Co., Whitefield				
7157	Timothy (Pan American)	S	99.60	S	90
	J. A. Lane & Co., Hampton				
7121	Timothy (XXX, Lot 1)	S	99	S	93
	Lewis Bros., Lebanon				
7077	Timothy (Pine Tree, 67829)	S	99.65	S	95
	Manchester Hardware Co., Manchester				
7220	Timothy (Pine Tree, 69176)	S	99.60	S	94
	McQuesten & Lewis, Manchester				
7325	Timothy (68354, Pine Tree)	S	99.60	S	95
	Meredith Grain Co., Meredith				
7153	Timothy (68800, Pine Tree)	S	99.65	S	94
	Merrimack Farmers' Exchange, Exeter				
7244	Timothy (67536, Pine Tree)	S	99.60	S	94
	Merrimack Farmers' Exchange, Concord				
7051	Timothy (Pan American)	S	99.60	S	90
	J. J. Moreau & Son, Manchester				
7270	Timothy (White Mtn.)	S	99.65	S	95
	Muzzey & Hopkins, Lakeport				
7222	Timothy (Imperator)	S	99	S	90
	W. F. Neal Co., Derry				
7370	Timothy (691117, Pine Tree)	S	99.60	S	94
	D. A. Noyes & Son, Colebrook				
7316	Timothy (Gold Medal)	S	99.75	S	94
	C. W. Roberts, Meredith				
7320	Timothy (66183, Pine Tree)	S	99.60	S	94
	H. C. Sanborn, Laconia				

A=Above

S=Satisfactory

RESULTS OF SEED TESTS, 1929

19

SEED EXAMINATION, 1929—Continued

Sample No.	Kind of Seed, Brand, Name and Address of Dealer	Purity		Germination	
		F'nd	Guaran- teed	F'nd	Guar- anteed
7168	Timothy	S	98	S	90
	S. A. Schurman & Son, Portsmouth				
7194	Timothy (Pan American)	S	99.60	S	90
	S. A. Schurman & Son, Portsmouth				
7177	Timothy (68750, Pine Tree)	S	99.65	S	94
	J. H. Seavey, Dover				
7252	Timothy (66—516)	S	99.65	S	95
	C. P. Stevens Co., Franklin				
7292	Timothy (Bay State)	S	99.65	S	95
	Strafford Co. Grain Mill, Rochester				
7238	Timothy (68800, Pine Tree)	S	99.65	S	94
	Thompson & Hoague Co., Concord				
7058	Timothy (Breck)	S	98	S	91
	A. J. Turcotte, Newmarket				
7072	Timothy (Durham, 68091)	S	99.60	S	94
	John B. Varick Co., Manchester				
7075	Timothy (Durham, 6794—3)	S	99.60	S	94
	John B. Varick Co., Manchester				
7087	Timothy, (Jersey, 680391)	S	98	S	91
	John B. Varick Co., Manchester				
7094	Timothy (Pine Tree, 68920)	S	99.60	S	94
	John B. Varick Co., Manchester				
7095	Timothy (Pine Tree, 68917)	S	99.60	S	94
	John B. Varick Co., Manchester				
7118	Timothy (Jersey, 67920)	S	98	S	91
	John B. Varick Co., Manchester				
7148	Timothy (Pan American)	S	99.60	S	90
	W. A. Young, Exeter				
7313	Vetch, Spring	S	98	S	90
	Keegan & French, Franklin				
7131	Wheat (75321, Marquis Type)	S	98.50	S	96
	Merrimack Farmers' Exchange, Ex- eter				
7242	Wheat (75330, Marquis Type)	S	99.86	S	95
	Merrimack Farmers' Exchange, Con- cord				
7073	Wheat, Spring (Marquis)	S	99.60	S	90
	John B. Varick Co., Manchester				
7357	Wheat, Spring (241, Marquis Type)	S	99	S	97
	H. K. Webster Co., Colebrook				
7186	White Clover (Choice)	S	97	S	95
	R. L. Costello, Portsmouth				
7112	White Clover (Choice)	S	96	S	90
	C. M. Hildreth & Son, Lebanon				
7138	White Clover	S	97	S	95
	Hilliard & Kimball, Exeter				
7354	White Clover (White Mtn.)	84.20	90	S	92
	Holbrook Grocery Co., Woodsville				
7076	White Clover (26—33)	S	97.60	S	71
	Manchester Hardware Co., Man- chester				
7052	White Clover (Choice)	S	96	S	90
	J. J. Moreau & Son, Manchester				
7169	White Clover (25459—60)	S	95.75	S	94
	J. H. Seavey, Dover				
7082	White Clover (26516)	S	98.05	S	94
	John B. Varick Co., Manchester				

A=Above

S=Satisfactory

SUMMARY TABLE
 Showing General Results of Seed Inspection Work
 for the year ending June 30, 1929

Kind of Seed	Number of Samples	Purity Compared to Guarantee		No Guarantee	Germination Compared to Guarantee		No Guarantee
		Above	Satisfactory		Above	Satisfactory	
Alfalfa	9	1	8	0	1	5	1
Alsike	31	2	26	3	0	26	0
Barley	14	0	14	0	2	12	0
Bluegrass, Canada	1	0	1	0	0	1	0
Bluegrass, Kentucky	2	0	1	1	0	2	0
Buckwheat	3	0	3	0	0	3	0
Canada Field Peas	2	0	2	0	2	2	0
Corn	1	0	0	1	0	0	0
Millet, Golden	2	0	2	0	0	1	0
Millet, Hungarian	36	5	26	5	2	24	0
Millet, Japanese	43	6	23	14	2	38	0
Oats	22	0	22	0	0	21	0
Orchard Grass	1	1	0	0	0	1	0
Rape	3	0	3	0	0	3	0
Red Clover	51	9	32	10	5	38	0
Red Top	35	6	24	5	0	21	0
Rye	5	0	5	0	0	4	0
Soy Beans	1	0	1	0	0	0	0
Sweet Clover	1	1	0	0	0	1	0
Timothy	55	2	52	1	0	55	0
Vetch	1	0	1	0	0	1	0
Wheat	4	0	4	0	0	4	0
White Clover	8	0	7	1	0	8	0
	331	33	257	40	10	267	1



~~PAS~~

~~630.72~~

~~N532~~

~~no. 233-250~~

